CLAIMS

What is Claimed is:

1.   A processor comprising:

a counter mechanism for counting issued stores to conservatively manage a

5   store capacity of a store container for handling said issued stores, wherein said

counter mechanism is incremented when a store is issued, wherein said counter

mechanism is decremented for each decrementing condition occurring relative to said

store capacity, and wherein when a value of said counter mechanism equals a

predetermined value a response is executed to determine whether said store capacity

10   has been exceeded.

2.   The processor as recited in Claim 1 wherein said decrementing condition

is a drain of an issued store from said store container.

15   3.   The processor as recited in Claim 1 wherein said decrementing condition

is a pre-allocated space in said store container for an issued store.

4.   The processor as recited in Claim 1 wherein said issued stores are

received by a queue before proceeding to said store container.

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5.   The processor as recited in Claim 1 further comprising a monitor for

indicating when said value of said counter mechanism equals said predetermined

value and for initiating said response.

6.   The processor as recited in Claim 1 wherein said store container

comprises a data cache that supports speculative modifications and a speculative

cache buffer, and wherein said store capacity is a store capacity for issued stores that

5   are speculative stores.

7.   The processor as recited in Claim 6 wherein if said issued store is a

speculative store, said counter mechanism is incremented.

10   8.   The processor as recited in Claim 6 wherein if a commit operation is

performed, said counter mechanism is cleared.

9.   The processor as recited in Claim 6 wherein if a rollback operation is

performed, said counter mechanism is cleared.

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10.   The processor as recited in Claim 6 wherein said decrementing condition

is a pre-allocated space in said store container for an issued store that is a speculative

store.

20   11.   The processor as recited in Claim 1 wherein said store container

comprises a store buffer.

12.   The processor as recited in Claim 11 wherein said counter mechanism

includes a speculative stores counter and a speculative stores and non-speculative

stores counter, and wherein said response is executed when a value of said

speculative stores and non-speculative stores counter equals said predetermined

5   value.

13.   The processor as recited in Claim 11 wherein if said issued store is a

speculative store, said speculative stores counter is incremented and said speculative

stores and non-speculative stores counter is incremented.

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14.   The processor as recited in Claim 11 wherein if said issued store is a

non-speculative store, said speculative stores and non-speculative stores counter is

incremented.

15   15.   The processor as recited in Claim 11 wherein if a commit operation is

performed, said speculative stores counter is cleared.

16.   The processor as recited in Claim 11 wherein if a rollback operation is

performed, a value of said speculative stores counter is subtracted from a value of said

20   speculative stores and non-speculative stores counter.

17.   The processor as recited in Claim 11 wherein said decrementing condition is a drain of an issued store from said store buffer, wherein said issued store is a non-speculative store.

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18.   A system comprising:

a store container for handling issued stores; and

a processor operative to issue stores, comprising:

a counter mechanism for counting said issued stores to conservatively

10   manage a store capacity of said store container, wherein said counter mechanism is incremented when a store is issued, wherein said counter mechanism is decremented for each decrementing condition occurring relative to said store capacity, and wherein when a value of said counter mechanism equals a predetermined value a response is executed to determine whether said store capacity has been exceeded.

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19.   The system as recited in Claim 18 further comprising a queue for receiving said issued stores before being received by said store container.

20.   The system as recited in Claim 18 wherein said decrementing condition

20   is a drain of an issued store from said store container.

21.   The system as recited in Claim 18 wherein said decrementing condition is a pre-allocated space in said store container for an issued store.

22.   The system as recited in Claim 18 wherein said processor further comprises a monitor for indicating when said value of said counter mechanism equals said predetermined value and for initiating said response.

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23.   The system as recited in Claim 18 wherein said store container comprises a data cache that supports speculative modifications and a speculative cache buffer, and wherein said store capacity is a store capacity for issued stores that are speculative stores.

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24.   The system as recited in Claim 23 wherein if said issued store is a speculative store, said counter mechanism is incremented.

25.   The system as recited in Claim 23 wherein if a commit operation is

15   performed, said counter mechanism is cleared.

26.   The system as recited in Claim 23 wherein if a rollback operation is performed, said counter mechanism is cleared.

20   27.   The system as recited in Claim 23 wherein said decrementing condition is a pre-allocated space in said store container for an issued store that is a speculative store.

28. The system as recited in Claim 18 wherein said store container comprises a store buffer.

29. The system as recited in Claim 28 wherein said counter mechanism

5   includes a speculative stores counter and a speculative stores and non-speculative stores counter, and wherein said response is executed when a value of said speculative stores and non-speculative stores counter equals said predetermined value.

10   30. The system as recited in Claim 28 wherein if said issued store is a speculative store, said speculative stores counter is incremented and said speculative stores and non-speculative stores counter is incremented.

31. The system as recited in Claim 28 wherein if said issued store is a non-

15   speculative store, said speculative stores and non-speculative stores counter is incremented.

32. The system as recited in Claim 28 wherein if a commit operation is performed, said speculative stores counter is cleared.

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33. The system as recited in Claim 28 wherein if a rollback operation is performed, a value of said speculative stores counter is subtracted from a value of said speculative stores and non-speculative stores counter.

34.   The system as recited in Claim 28 wherein said decrementing condition is a drain of an issued store from said store buffer, wherein said issued store is a non-speculative store.

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35.   A method of conservatively managing a store capacity of a store container receiving issued stores from a processor having a counter mechanism, said method comprising:

incrementing said counter mechanism when a store is issued;

10   decrementing said counter mechanism for each decrementing condition occurring relative to said store capacity; and

when a value of said counter mechanism equals a predetermined value, executing a response to determine whether said store capacity has been exceeded.

15   36.   The method as recited in Claim 35 wherein said decrementing condition is a drain of an issued store from said store container.

37.   The method as recited in Claim 35 wherein said decrementing condition is a pre-allocated space in said store container for an issued store.

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38.   The method as recited in Claim 35 wherein said issued stores are received by a queue before being received by said store container.

39.   The method as recited in Claim 35 wherein said store container

comprises a data cache that supports speculative modifications and a speculative

cache buffer, and wherein said store capacity is a store capacity for issued stores that

are speculative stores.

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40.   The method as recited in Claim 39 wherein said incrementing said

counter mechanism comprises:

if said issued store is a speculative store, incrementing said counter

mechanism.

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41.   The method as recited in Claim 39 further comprising:

if a commit operation is performed, clearing said counter mechanism.

42.   The method as recited in Claim 39 further comprising:

15   if a rollback operation is performed, clearing said counter mechanism.

43.   The method as recited in Claim 39 wherein said decrementing condition

is a pre-allocated space in said store container for an issued store that is a speculative

store.

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44.   The method as recited in Claim 35 wherein said store container

comprises a store buffer.

45.   The method as recited in Claim 44 wherein said counter mechanism includes a speculative stores counter and a speculative stores and non-speculative stores counter.

5   46.   The method as recited in Claim 44 wherein said incrementing said counter mechanism comprises:

if said issued store is a speculative store, incrementing said speculative stores counter and incrementing said speculative stores and non-speculative stores counter.

10   47.   The method as recited in Claim 44 wherein said incrementing said counter mechanism comprises:

if said issued store is a non-speculative store, incrementing said speculative stores and non-speculative stores counter.

15   48.   The method as recited in Claim 44 further comprising:

if a commit operation is performed, clearing said speculative stores counter.

49.   The method as recited in Claim 44 further comprising:

if a rollback operation is performed, subtracting a value of said speculative

20   stores counter from a value of said speculative stores and non-speculative stores counter.

50.   The method as recited in Claim 44 wherein said decrementing condition is a drain of an issued store from said store buffer, wherein said issued store is a non-speculative store.

5   51.   The method as recited in Claim 44 wherein said executing said response comprises:

determining an actual value of issued stores in said store buffer by draining a queue to cause adjustment of a value of said speculative stores and non-speculative stores counter.

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52.   The method as recited in Claim 35 wherein said executing said response comprises:

determining an actual value of issued stores in said store container by draining a queue to cause adjustment of said value of said counter mechanism.

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53.   The method as recited in Claim 35 wherein said executing said response comprises:

determining an actual value of issued stores in said store container by draining a queue to cause adjustment of said value of said counter mechanism, wherein said

20   issued stores are speculative stores.